Application Number	: 10/699,412	Confirmation Number: 2088
Applicant	: Josephus C. Ebergen et al.	
Filed	: 31 October 2003	
T.C./A.U.	: 2443	
Examiner	: Cooney, Adam A.	
Docket Number	: SUN-P9550	
Customer No.	: 57960	

Amendment after Final Rejection
Via Electronic Filing

AMENDMENT

Sir:

In response to the Office Action of **29 June 2011**, please amend the above-identified Application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 8 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for regulating communications between a plurality of transmitters and a receiver, comprising:

a plurality of cells, wherein each cell controls communications from a transmitter in the plurality of transmitters to the receiver;

wherein the plurality of cells are arranged in a token ring that regulates communications from the plurality of transmitters to the receiver;

wherein the presence of a token within a token ring cell indicates that the corresponding transmitter may communicate with the receiver; and

wherein each cell is configured to receive a request signal from a corresponding transmitter, and in response to the request signal, is configured to issue an acknowledgement signal to the corresponding transmitter which allows the corresponding transmitter to begin transmitting if the cell has the ~~token;~~ and~~token;~~

a flow control mechanism in each cell that receives a flow-control signal from the receiver, wherein the receiver asserts the flow-control signal when the receiver is ready to receive communications, and wherein the flow control mechanism comprises logic for generating the acknowledgement signal by logically combining a previous acknowledge signal from the cell ~~and an acknowledgement signal from a neighboring cell~~ with the flow-control signal; and

circuitry in the transmitters to handle erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result

of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted.

2. (Original) The system of claim 1, further comprising:

a plurality of receivers; and

a plurality of token rings, wherein each token ring passes a corresponding token among token ring cells that control communications from the plurality of transmitters to a receiver corresponding to the token ring.

3. (Previously presented) The system of claim 2, wherein the plurality of cells are arranged in a grid wherein a row corresponds to a transmitter and a column corresponds to a receiver.

4. (Original) The system of claim 1, wherein the communications can include one of:

an electrical signal;

a mechanical signal; and

an optical signal.

5. (Cancelled)

6. (Previously presented) The system of claim 1, wherein each transmitter further comprises a reset mechanism that is configured to release the clearance to communicate with the receiver by resetting the request signal.

7. (Original) The system of claim 6, wherein the system further comprises an acknowledgement mechanism configured to confirm the release of the clearance by resetting the acknowledgement signal.

8. (Original) The system of claim 1, further comprising an initialization mechanism configured to initialize the single token in the token ring.

9. (Original) The system of claim 1, wherein the system operates asynchronously.

10. (Cancelled)

11. (Currently Amended) A method for regulating communications between a plurality of transmitters and a receiver, comprising:

receiving a request signal from a transmitter at a cell in a plurality of cells requesting to communicate with the receiver;

wherein the plurality of cells are arranged in a token ring that regulates communications from the plurality of transmitters to the ~~receiver; and~~receiver;

in response to the request signal, issuing an acknowledgement signal to the transmitter which allows the transmitter to begin transmitting if the presence of a token is detected within the cell, wherein the acknowledgement signal is not issued unless the receiver has asserted an enabling signal to the cell that indicates that the receiver is ready to receive data and a flow-control signal has been asserted by the ~~receiver, wherein the acknowledgement signal is generated by logically combining a previous acknowledge signal generated from the cell and an acknowledgement signal from a neighboring cell with the flow-control signal~~receiver; and

in the transmitter, handling erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted.

12. (Original) The method of claim 11, wherein the plurality of cells include a plurality of token rings, wherein each token ring passes a corresponding token among token ring cells that control communications from the plurality of transmitters to a receiver corresponding to the token ring.

13. (Original) The method of claim 11, wherein a plurality of cells that regulate communications between the transmitters and receivers are arranged in a grid wherein a row corresponds to a transmitter and a column corresponds to a receiver.

14. (Original) The method of claim 11, wherein the communications can include one of:

an electrical signal;

a mechanical signal; and

an optical signal.

15. (Original) The method of claim 11, further comprising revoking the permission for the transmitter to communicate with the receiver when the transmitter resets the request signal.

16. (Original) The method of claim 15, further comprising resetting the acknowledgement signal to confirm the revocation of the permission for the transmitter to communicate with the receiver.

17. (Original) The method of claim 11, further comprising initializing the token in the token ring.

18. (Original) The method of claim 11, wherein the system operates asynchronously.

19. (Cancelled)

20. (Currently Amended) A multi-processor system, comprising:

a plurality of processors;

a plurality of transmitters associated with the processors;

a plurality of receivers associated with the plurality of processors;

a plurality of cells, wherein each cell controls communications from a transmitter in the plurality of transmitters to a receiver;

wherein the plurality of cells are arranged in a token ring that regulates communications from the plurality of transmitters to a receiver;

wherein the presence of a token within a token ring cell indicates that the corresponding transmitter may communicate with the receiver; and

wherein each cell is configured to receive a request signal from a corresponding transmitter, and in response to the request signal, is configured to issue an acknowledgement signal to the corresponding transmitter which allows the corresponding transmitter to begin transmitting if the cell has the ~~token;~~ and~~token;~~

a flow control mechanism in each cell that receives a flow-control signal from the receiver, wherein the receiver asserts the flow-control signal when the receiver is ready to receive communications, and wherein the flow control mechanism comprises logic for generating the acknowledgement signal by logically combining a previous acknowledge signal from the cell ~~and an acknowledgement signal from a neighboring cell~~ with the flow-control signal; and

circuitry in the transmitters to handle erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result

of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted.

21. (Canceled)

REMARKS

In the Official Action mailed on **29 June 2011**, Examiner reviewed claims 1-4, 6-9, 11-18, and 20. Examiner rejected claims 1-4, 6-9, 11-18, and 20-21 under 35 U.S.C. § 112. Examiner rejected claims 1-4, 6-9, 11-18, and 20-21 under 35 U.S.C. § 103(a) based on Orsic (U.S. Patent No. 4,817,082, hereinafter "Orsic") in view of Erimli et al. (U.S. Patent No, 6,842,423, hereinafter "Erimli"). Examiner rejected claims 1-4, 6-9, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Orsic in view of Erimli et al. (U.S. Patent No. 6,842,423, hereinafter "Erimli").

Rejections under 35 U.S.C. § 112

Examiner rejected claims 1-4, 6-9, 11-18, and 20-21 under 35 U.S.C. § 112. More specifically, Examiner argued as follows:

> Claims 1-4, 6-9, 11-18, 20 and 21 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement … The claims have been amended to recite "combining a previous acknowledgement signal generated from the cell and an acknowledgement signal from a neighboring cell" … There is no support showing" combining a previous acknowledge signal generated from the cell and an acknowledgement signal from a neighboring cell (emphasis added)". For purposes of examination, the claim is construed as combining the previous acknowledgment signal and an acknowledgement signal from the cell (one cell), as supported by the applicant's specification.[1]

Although not agreeing with Examiner's argument, Applicant has otherwise amended the claims, and the indicated language no longer appears in the amended claims. For this reason, the rejection under 35 U.S.C. § 112 has been rendered moot and should therefore be withdrawn.

---

1 see office action, pages 4-5

Rejections under 35 U.S.C. § 103

Examiner rejected claims 1-4, 6-9, 11-18, and 20-21 under 35 U.S.C. § 103(a) based on Orsic in view of Erimli. Although not agreeing with Examiner's arguments based on the previous language of independent claims 1, 11, and 20, Applicant has amended independent claim 1 to recite "circuitry in the transmitters to handle erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted," has similarly amended independent claims 11 and 20 (see claims 11 and 20 for the actual amendments), and has canceled claim 21. These amendments find support throughout the specification and figures of the instant application, including in the following exemplary citation from the instant application:

> At about the same time that a transmitter sends the end of a message to a receiver, the receiver may set its flow control to 0. Subsequently, the transmitter releases the token in the token-ring and an arbiter in a following token-ring cell may set *Ack*0 to 1. The rising edge of *Ack*0 may occur at about the same time that the input FC_{in} is reset to 0. As a result, at about the same time the inputs of the AND gate may change in opposite directions, which may create a small pulse on the output of the AND gate. To avoid any problems with short pulses, the transmitter can include circuitry to deal with such short pulses.[2]

Orsic and Erimli do not describe or suggest "circuitry in the transmitters to handle erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted" such as in amended independent claim 1, or the similar language in amended independent claims 11 and 20.

---

2 see instant application, par. [0064]

Orsic describes a switching arrangement with a separate control ring mechanism:

> A switching arrangement comprising a crossbar array of crosspoint elements where each column of crosspoint elements, is associated with its own control ring mechanism. The enabling of the individual crosspoint elements of a column and the subsequent transmission of packets are effected rapidly in response to a token, e.g., a single enable bit, that is circulated on the associated control ring.[3]

Orsic describes using a set of *N* passed tokens to control crosspoint elements in the system:

> An arrangement in accordance with the invention is used for switching information from M input means to N output means. The arrangement includes an array of M X N crosspoint elements each associated with one of the input means and one of the output means. Each crosspoint element is responsive to a token for switching information from its associated input means to its associated output means. The arrangement further includes N control rings each associated with a different one of the output means for circulating a token among crosspoint elements associated with that output means.[4]

Orsic also generally describes "flow control" implemented in output controllers:

> With respect to packet switching within system 100, output controller 102-1 provides only buffering facilities and flow control ... Controller' 102-1 can stop the flow of packets to it, for example when its buffering facilities are full, by applying a busy signal on the B-line of bus 104-1.[5]

Orsic does not describe or suggest "circuitry in the transmitters to handle erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted" such as in amended

---

3 see at least Orsic, Abstract
4 see *id.*, col. 2, lines 25-35
5 see *id.*, col. 6, lines 28-36

independent claim 1, or the similar language in amended independent claims 11 and 20.

Erimli describes a system that masks priorities in a flow control mechanism:

> The present invention is directed to flow control mechanisms in a network device, such as the multiport switch 180, that mask certain priorities to prevent other (possibly higher) priorities from being flow controlled.[6]

Erimli further describes the system as follows:

> The PVQ 235 receives the threshold signals from the output queues 310. The mask register 410 within the PVQ 235 may generate mask signals on a per output port and per priority level basis [act 520]. The mask register 410 may map flow identifiers, output port identifiers, and/or priority level values to corresponding mask signals. The mask signals may be used to mask certain priorities to prevent other priorities from being flow controlled, for example, when congestion occurs at an output port.[7]

Erimli does not describe or suggest "circuitry in the transmitters to handle erroneous short pulses in a corresponding acknowledgement signal, wherein the short pulses occur as a result of the flow-control signal from the receiver being deasserted after the acknowledgement signal is asserted" such as in amended independent claim 1, or the similar language in amended independent claims 11 and 20.

Because Orsic and Erimli do not describe or suggest amended independent claims 1, 11, or 20, Orsic and Erimli do not render the amended independent claims obvious. For this reason, Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. § 103 based on Orsic and Erimli. Applicant further respectfully requests the withdrawal of any rejections of the dependent claims in the instant application based on Orsic and Erimli for the same reason.

---

6 see Erimli, col. 1, lines 40-46
7 see *id.*, col. 8, lines 38-47

CONCLUSION

It is submitted that the application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,

By /Anthony Jones/
Anthony Jones
Registration No. 59,521

Date: 31 October 2011

Anthony Jones
Park, Vaughan, Fleming & Dowler, LLP
2820 Fifth Street
Davis, CA 95618-7759
Tel: (530) 759-1666
Fax: (530) 759-1665
Email: tony@parklegal.com